

INAUGURAL ADDRESS TO THE EPIDEMIOLOGICAL SOCIETY.

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BEFORE we proceed to the regular business of the first meeting of our thirty-first session, it seems right that I should make a few preliminary remarks on the actual condition of the Society, and on the work that it has done during the past year. But let me first thank you for re-appointing me to the office of President, and repeat that I shall endeavour to discharge as efficiently as possible the duties of the trust you have been pleased again to repose in me.

I am happy to congratulate you on the continued prosperity of the Society, and on the results of its working during the past session. The increase in number of members, the substantial addition to the funds, and the character of the subjects that have been discussed, are such as may, I think, give cause for satisfaction both as to our present and future prospects. The Epidemiological Society ought to exercise a wide and beneficial influence on the important questions regarding the origin and diffusion of disease that are constantly presenting themselves for consideration, and I believe we have grounds for hoping that this expectation is in some measure realised, and that its influence is gradually growing and becoming more widely diffused, as I hope to show by a brief reference to the subjects that have been discussed, especially those which have given opportunity of comparing certain diseases in tropical climates with the same diseases as they present themselves here. Let us hope that, as in former years it did in respect of small-pox and vaccination, so it may in future exercise its influence in regard to other questions concerning public health and the investigation of matters that are still the subjects of uncertainty in epidemiological science. It appears we have had an accession of twenty-three members during the past year, the great proportion being officers of the Navy, Army, and Indian Medical Departments; only six were unconnected with the public services. Whilst fully recognising the advantage arising from the co-operation of those who have had opportunities of studying disease on a large scale and under varying conditions in different quarters of the globe, I must say—and I think you will agree with me—that we should be glad if our ranks were more largely recruited from the profession generally, and also from other sources. Our Society is essentially catholic in its aims, and its object is the study of epidemiology on the broadest general principles, and under all conditions in which disease appears. It seeks information from medical men or others, whether in the public services, colonies or other foreign countries, or among the large

body of physicians and surgeons, as well as other educated persons, who are scattered over the cities, towns, villages, and rural districts of our own islands, and who are all now more or less occupied, or if not occupied, are interested, in the prevention of disease and conservation of health. Therefore, whilst trusting that we may still continue to be supported as much as ever by the medical officers of the public services, I venture to hope that we may have large additions of those who have adopted the private practice of the profession; and I would add that the Society by no means desires to restrict its privileges to medical men, but would gladly associate with it military and naval officers, sanitary engineers, architects, and members of other cognate scientific professions, as well as magistrates or administrative officers, especially those who in our foreign possessions have public duties that bring them in contact with questions bearing on public health. Among the numerous scientific societies in London having claims on medical men, the Epidemiological, I fear, offers comparatively few attractions to the profession generally—concerning itself with questions that are chiefly of general, rather than special, interest. It commends itself, naturally, to the medical officers of the public services, dealing as it does with subjects that have occupied so large a share of their attention, but perhaps fails to interest the younger and working class of medical men who are intent on special subjects of inquiry. But I hold that this Society should include on its rolls *all* classes of the profession, as well as other scientific men, as the questions that fall under its consideration are of interest to everyone, and I hope that, as time advances, it *will* attract such a share of attention as may place it in the position to which I think it is entitled.

The annual report informs us that our financial position, though not one of affluence, is at least fairly good. We have been able, after the payment of all expenses, and after publishing Part 2, vol. iv. of the *Transactions*, to show a balance at credit at the end of the session; and it is now intended to commence a new series of *Transactions*. We have also printed three papers on Fever in Sub-tropical Latitudes, to appear in a future number. And here we ought again to express our thanks to the authorities of University College for allowing us to hold our meetings in their Council-room, free of expense except such as attends the lighting of the rooms. It has, indeed, been questioned whether it might not be expedient to resort to the room in Chandos-street formerly occupied by the Society, and probably the subject may be re-opened at some future period; meanwhile the Council have deemed it better to remain where we are, so we shall continue, for a time at all events, to avail ourselves of the hospitality so graciously extended to us, and for which we make grateful acknowledgment.

So far, all I have had to say speaks of prosperity and progress—increasing numbers, interesting communications, and financial improvement. I have still to refer to the work of the past session; but, before doing so, I have another duty to perform. It has been with us as with others—time has brought loss as well as gain; and I have now to remind you of losses too grievous to be repaired, for we miss from among our comparatively limited number three men of great distinction, removed while yet in the vigour of intellectual life—one at a comparatively early age, just when the promise of his early years was being fulfilled. The past year told heavily on most of our scientific societies, and many an

honoured name has disappeared from their rolls; but I doubt if any have suffered, in proportion to their numbers, so much as we have, in the loss of Dr. E. C. Seaton, Mr. H. Leach, and Dr. E. Goodeve. Dr. Edward Cator Seaton was one of the founders and presidents of our Society, and it was during his early connexion with it that he commenced the researches into the subject of vaccination and small-pox which are embodied in his valuable reports, and ultimately led to that important measure, the Compulsory Vaccination Act of 1853. It is in connexion with this that his name has attained a wide reputation, for certainly no one has done more towards promoting the diffusion of Jenner's great discovery, and in systematising the methods by which it has been so largely extended to the people. His writings on vaccination and small-pox are well known as authoritative works on the subject, in regard to which his name will stand on record as that of a public benefactor. Dr. Seaton's public services were not confined to his efforts in respect of vaccination. As an inspector under the General Board of Health, he was much interested in, and actively concerned himself with, other sanitary subjects; and his selection as the British representative at the Sanitary Conference held at Vienna in 1874, of which he made a valuable report, bears witness to the esteem in which he was held as a sanitary authority. In 1876 he succeeded Mr. Simon, C.B., as Medical Officer to the Local Government Board, to which he had previously been Assistant Medical Officer. His extensive knowledge of sanitary science, his administrative capacity and sound judgment, made him a peculiarly fitting successor to his distinguished predecessor. Dr. Seaton enjoyed good health until a year or so after he became Medical Officer to the Local Government Board, when signs of impairment appeared. The duties, which were very arduous, had severely taxed his strength, but he continued to perform them for a year longer, when his medical adviser deemed it expedient to enjoin rest and change, which advice he prepared to follow. About this time a severe domestic affliction made a deep and profound impression on him, and must have aggravated the depression of his general health. He returned to work, however, in June, feeling anxious to resume duties in which he might find that solace which perhaps is the best remedy for such a sorrow. Some improvement in his health followed, but it was only transient, for in the following October, when on a visit in Warwickshire, he was seized with an attack of hemiplegia, from which he partially recovered, and hopes were entertained that his valuable life would be prolonged; but they proved illusory, for he sank under a second attack on January 21, 1880, in the sixty-fourth year of his age, deeply lamented by his family and by a large circle of friends. I had only recently made his acquaintance, but was, as others must have been, much attracted by his gentle and courteous manner and bearing; and felt that in him we had lost a sterling friend, the public a learned physician and sanitarian, and the Government a valuable officer,—would that I could have added that the public recognition to which his services eminently entitled him had been accorded! His valuable life closed too soon, but not too soon to have left an example which those who follow in the walk of life to which he devoted himself may feel pride in attempting to imitate.

It is also my duty to record the death of another distinguished member of the Society, Mr. Harry Leach, who died at the early age of forty-three, after a brief but brilliant career, which was largely devoted to the advancement of public interests, in the duties of the important office of Health Officer for the Port of London—a post of which he was the first incumbent, and which was founded, most probably, as the result of his own efforts during the cholera invasion of 1866, when he was most active, as a medical officer of the *Dreadnought*, in instituting a thorough examination of all ships that came into the river from suspected ports, and in devising measures for the relief and segregation of those who were attacked with the disease. He was enthusiastic in the pursuit of professional knowledge, and of all that threw light on the subject he had so much at heart, whilst his acquaintance with disease appears to have been sound and extensive. To his efforts and representations the merchant navy are largely indebted for measures that have tended materially to diminish scurvy, and they received their reward in the success that resulted from them, and in the passing of the Amended Merchant Seamen's Act, especially in regard to the use of anti-scorbutics. In his anxiety to benefit others, he took too little heed of his own health, and the fogs and damps of the river, to which he was much exposed in the performance of his duties, contributed to develop disease in lungs originally delicate. A voyage to Natal produced some improvement, but of brief duration, for he succumbed on November 26, 1879, to the great regret of all who knew him.

Since writing the above, intelligence has reached us of the death of Deputy Inspector-General E. Goodeve, M.B., Honorary Physician to the Queen, at Stoke Bishop, in the sixty-fourth year of his age. He had for some time been in failing health from some obscure form of cerebral disease, and the end came rather suddenly on the 27th of last month. He was at one time an active member of our Society, and took a prominent part in the discussions. His last public service was as British representative at the Cholera Conference at Constantinople in 1866. His knowledge of disease was profound, and his contributions on cholera, diarrhoea, enteric fever in India, and the so-called red fever of Bengal, were most valuable. His service in India commenced in 1841, and his whole career—whether in the field during the Sutlej campaign, in the large civil station of Cawnpore, where he acquired great experience, or during his long connexion with the Medical College and Hospital in Calcutta as Professor of Medicine and senior Physician, President of the Faculty of Medicine, and Examiner in Medicine of the Calcutta University—was most distinguished. He rapidly attained the highest honours and position as a physician and a teacher; whilst his retiring, unaffected, straightforward, and noble character endeared him to all who knew him. The medical officers of India have not been among the least of her benefactors; and none assuredly ever did more to deserve that epithet than Edward Goodeve. His death will be deeply lamented and his memory fondly cherished by his Service and by natives and Europeans alike in India.

I now turn to a brief retrospect of the subjects that have occupied us during the last session. They have all been important, whilst the discussions on them have been most interesting, especially those on Indian fevers, and I trust they may have the effect of drawing attention to the importance of reconsidering the question, especially as respects the etiology of those forms which, while presenting the

phenomena of the enteric fevers of Europe, are by some considered to be due to general rather than to specific causes. I will briefly refer to the papers that have been read during the past year. Three important contributions on Plague have been made: the first was by Dr. Payne, one of the two Commissioners appointed by Government in 1879 to investigate the plague which had been prevailing on the banks of the Volga in the province of Astrakan in 1878-79. This interesting communication threw much light on the geographical distribution, history, progress, and diffusion of the disease, which the Commissioners consider was Levantine plague; and on the measures taken by the Russian Government for its suppression. They consider that there is no evidence to support the theory that it was introduced by Cossacks returning from the war in Asia, or that it was directly transferred from Resht or elsewhere on the Caspian Sea to Vetljanka; but that everything pointed to the conclusion that the disease had already gained a footing in the district (whether introduced from outside, or springing up spontaneously in its soil) before the outbreak at Vetljanka. Dr. Payne remarks that, with regard to the possible spontaneous origin, "it appears that the same reasons which will hold to show that plague is endemic, or springs up without being introduced from elsewhere, in other parts of the world, seem to apply here. Actual proof of such an origin would be, almost in any case, unattainable; but the difficulties which beset all theories accounting for its introduction into the district certainly argue strongly in favour of such a view." With regard to the nature of the epidemic, its character, and its morbid anatomy, the wide spread of the disease, with special reference to personal communication and the influence of local causes of contagion, the Commissioners had no opportunity of forming any opinion from personal observations, as the disease had died out before their arrival. The information they obtained, from those examined on the spot, is all they had on which to form conclusions on these subjects, and it is to be regretted that, on matters about which wide differences have been expressed, the opportunity had not been afforded to such highly qualified observers of making personal investigation.

An interesting summary of the German Medical Commissioners' report on the same subject was read by Mr. H. L. Hamilton. Dr. A. Hirsch, of Berlin, whose account of the plague in Astrakan differs considerably from that of Drs. Payne and Colvill, describes it as a malignant contagious disease, with all the characters of Oriental plague, sometimes with buboes, sometimes without them. He and his German colleagues attribute the outbreak to the importation of infected articles from the Asiatic seat of the Russo-Turkish war, and that it was not imported from Resht; neither is it indigenous to Astrakan, where it had not appeared since 1808. Thus a further proof is afforded of the difficulty of tracing out the origin of this disease. The report shows that, owing to faulty and imperfect reports of the disease in Vetljanka, the Russian Government could not, or did not, avail itself of preventive or precautionary measures until the plague had attained its maximum intensity and was already approaching its natural termination. The paper was an interesting summary of the report, and showed that considerable difference of opinion exists on the subject of the etiology and mode of propagation of the disease.

Another interesting communication was by Surgeon-General Dr. Francis on the subject of Plague in India. He pointed out the geographical distribution in Kumaon and Gurhwal, to which it is at present confined, and where it is known as Mahamurrie, and described the characters and habits of the people of those districts, which are all conducive to the development of the disease. Known since 1823, but probably existing long before that period, it has been characterised by glandular swellings, hæmorrhages, and rapid death. It is endemic bubonic plague, caused by an animal poison which is generated by the operation of local conditions, and is in no way modified by malaria. Intensely contagious among the people themselves, the pilgrims and visitors who visit the shrines in that country, and those who carry merchandise to Tibet, appear not to suffer. Europeans also escape. The Pali plague—a disease having much the same characters, which was first known in the West of India in 1818—seems to be closely allied to the Mahamurrie, by which it has been, as it were, replaced, especially where insanitary conditions prevail, as they are so prone to do among those hill-people who claim Rajpoot descent. "It seems as though some common factors were at work, leading to the development of epidemic disease, each *sui generis* being brought out under the influence of certain local conditions. It is possible that the disease may have been imported through the medium of the cotton-workers, who may have received it through importation from Egypt *via* Surat in goods; but Dr. Francis is of opinion that the local conditions were sufficient to give rise to it, and that no assistance from without was needed. He attaches much importance to sanitary measures, and considers that it has been satisfactorily proved in the case of Mahamurrie that sanitary reform rigidly enforced was efficacious in presenting it."

These communications, though of considerable interest as contributions to the literature of the subject, do not add very materially to our knowledge on the important question of contagion and mode of diffusion and propagation. Let us hope that at no remote period it will again be brought under consideration.

Dr. Langstaff read a paper on the relationship between scarlatina, puerperal fever, erysipelas, and certain other diseases, in which he deduced, from the comparative death-rate curves and their annual fluctuations, that the different causes of death should be classified into the diarrhoeal group, relating to the heat of summer; the bronchitic, to the cold of winter; and the scarlatinal group, and a provisional group comprising all the other causes of death not known to be much influenced by meteorological conditions. All this was represented in elaborate diagrams and curves. One object of the paper was to suggest the probability that the poisons of erysipelas and puerperal fever were identical, while diphtheria and croup were also due to but one poison, and to discourage the multiplication of species in the classification of disease. The paper was a valuable contribution to statistical medicine—a mode of studying disease which, pursued on an extended scale, enables the inquirer to arrive, by the numerical method, at the nature of the laws which regulate and govern the origin and diffusion of disease.

Cholera has not attracted so much of your attention as in former sessions, but it has not been overlooked, and a most practical paper by your late President, who has probably seen more of the disease than almost any living physician, occupied attention and discussion during the greater part of one meeting.

Dr. Murray prepared a most elaborate set of statistical tables showing the prevalence of cholera in India since the early part of the century, and in his observations on these tables, pointed out the great value of removal of troops or prisoners to other localities on the breaking-out of cholera, and the objections that have been urged against it on the score of expense, and the risks arising from exposure to sunstroke, fever, etc., were not such as should forbid the change, which experience has shown to be attended with the best results; an argument that could be endorsed by many medical officers. The measure recommended by Dr. Murray, which was much what was officially promulgated in 1870 by the Government, comprised, along with change, the observance of all sanitary and hygienic details with strict attention, and enforced the selection of high, well-drained ground, on the other bank of a river if possible, especially should the site infected be near a stream. Dr. Murray's experience, and the constant care with which he has studied cholera in every phase and from every aspect, made the paper one of much practical value, and naturally elicited a considerable amount of discussion on a subject that he has made peculiarly his own.

Surgeon-General J. T. C. Ross, C.I.E., who went to Africa as Chief Commissioner of the Stafford House Committee for the relief of the sick and wounded in the Zulu War, read a paper on epidemic diseases in man and animals in the colony of Natal. He pointed out that although the climate had proved healthy for human beings, it had been unfavourable for cattle, and made some remarks on the prevailing forms of disease. Cholera is unknown hitherto, small-pox exceedingly rare. Typhoid was the principal disease that affected the troops during the campaign in Zululand; and Mr. Ross says the disease affecting the troops shut up in Ekowe was called typho-malarial fever, with rose-coloured spots and affection of Peyer's glands. The diseases affecting the lower animals were one allied to anthrax, diarrhoea, pleuro-pneumonia, and hæmo-albuminuria. Defective food and water are regarded as instrumental in causing much of the disease. The paper was all the more interesting that it was the result of very recent personal observation by an officer of large and varied experience.

The subject that has most engaged the attention of the Society has been that of certain forms of fever in India and tropical and subtropical climates, and several important communications on this subject have been made by men of large and varied experience; Dr. Chevers on relapsing fever; Dr. Ewart on enteric fever; Dr. Don on the continued fever of subtropical climates; and Dr. C. Gordon on the continued fever of India,—have most clearly placed their views before the Society, and have plainly shown that the subject still needs much investigation; and that, however strictly certain views of the etiology of these diseases may be applicable in Europe, a wider scope must be given to the inquiry in reference to causation in other parts of the world lying nearer the equator. Dr. Chevers traced the history, origin, and the gradual extension of relapsing fever in different parts of India, and its appearance in the form of a distinctive fever in the Indian gaols; its relation to other diseases, and its affinities with the so-called famine fever of Europe. The subject had also been reported on by Drs. V. Carter, W. G. Hunter, and Cunningham, and the relation of the spirillum as a cause had been discussed by these officers; the result being to show that while some authorities regarded the organism as the cause, others looked on it as

merely an epiphenomenon devoid of all causal relation to the disease. Dr. Chevers pointed out that though it has not appeared in Lower Bengal of late years, that country was subject to its ravages up to and beyond the end of the last century, and that it has appeared among the poor and half-starved inhabitants of certain districts and in the gaols. It has been considered by some that the outbreak of relapsing fever that appeared in Bombay in 1877 was not really referable to the famine that affected large areas of Southern India. The etiology of this form of fever, its relation to the effects of famine and to the spirillum, are still therefore *sub judice*. It is to be hoped that further research will produce reports that may give more light.

The chief interest of the proceedings of the year may be said to have centred in the discussion arising out of the communications by Drs. Ewart, Don, and C. Gordon, C.B., in respect of enteric fever. The subject has attracted a good deal of attention lately, in reference especially to the health of European troops serving in India and tropical climates. It is only recently, indeed, that the disease has been recognised as a cause of mortality in India, and now it appears from official reports that the death-rate from this disease among our European soldiers, especially the young ones, is very high. The question, therefore, that has been so earnestly discussed is this: Are all the cases returned as enteric fever, in which the symptoms and phenomena in life, and the post-mortem appearances, are similar to those of enteric fever in this country, due to the same causes?—that is, are they the result of the contagion of a specific poison generated in the intestine or its contents of one person, and conveyed to another through the intervention of air, water, or other medium? or are they not in some cases—perhaps a large proportion—due to causes of a different nature, referable to what are known as climatic influences, by which is meant heat, moisture, malaria, miasmata, or water in which these are dissolved or suspended, with perchance the addition of other causes (aërial, telluric) of which we know nothing positively, but of whose existence as dynamic agencies we probably have indications in other epidemic diseases. As to the existence in India and other tropical countries of a form of fever characterised by certain phenomena and pathological changes, very closely, if not exactly, resembling those that characterise the enteric fever of Stewart, Budd, Jenner, and Murchison, there is a pretty general consensus of opinion; and few who have practised long in India, or the tropics or subtropical regions, but have seen and treated cases that in all their symptoms and conditions were identical with the cases of typhoid they had seen at home. But on the question of causation there can be no doubt, as is evident from the papers referred to, that a considerable divergence of opinion exists, and, so far as I can make out from communications that I have seen or received from different parts of the world, it is a growing belief that the cause of some of the cases of the so-called enteric fever is to be sought in high temperature, malaria, miasmata, water contaminated by organic matter (not only faecal), rather than in a specific poison generated in the intestine or in the alvine discharges after extrusion from the bowel; and perhaps in some state of body, especially in the young, that is induced by exposure to one or all of these, whereby the poison or cause of the fever is elaborated in the body itself. It cannot, I think, be disputed that the poison of the enteric contagion theory advocated by the high authority already referred to must be equally effective in producing fever

wherever it occurs, and certainly not less so in India or the tropics than elsewhere. Few, I think, question its potency here now, though, if I may be pardoned for saying so, I think it is *possible* that twenty years hence, even here, this view may be somewhat modified. But, as I have said, some—and they are not inexperienced—are impressed with the belief that the specific contagion theory will not explain the facts in all cases abroad; nor do they see reason to think that a certain train of symptoms and phenomena during life, and lesions observed after death, must necessarily be *invariably* due to *one* single cause; but rather that the bowel ulceration, diarrhoea, spots, and a certain range of febrile disturbance in the temperature, and so on, may be brought about also by other conditions, such as those already referred to, and which make up what are known as climatic influences. It is, after all, a matter of speculation, and to a certain extent of evidence, for even in the most indisputable outbreaks of typhoid fever, wherever it may occur, the specific poison has never yet been seen or separated. Not that this is necessarily a reason for denying either its potency or the probability of its existence, on the one hand; but that, on the other, it seems equally reasonable to admit the possible efficiency of other causes.

For my own part, whilst freely admitting that enteric fever in India and the tropics may originate as it does here, I cannot resist the impression that other causes may be at work, and that cases of fever, which in India are not only called enteric, but present the phenomena in life and the changes after death that are characteristic of the disease in England, do occur, and not unfrequently, where it is more probable that climatic and other local conditions are the cause, than faecal contagion; though it must be admitted that it is not possible to deny the possibility of a faecal origin wherever human beings have been. But I have no desire to dogmatise, and I await further investigations and reports before I convince myself, or assert to others that to be a fact which at present is only an impression, though so strong as almost to amount to a conviction. It is a subject of considerable importance, and may well stimulate further inquiry, as there is reason to believe that it will, indeed has already, begun to receive, and nowhere with more interest than in this Society. I may not detain you to epitomise the three important papers, but would briefly say that in them the subject has been ventilated and discussed by men of large experience, who have had ample opportunity of forming opinions from *personal* observation; and the very fact that such observers differ in their views as to the etiology of this fever proves to my mind that there is good reason to think that the whole subject of the etiology of Indian fevers does need further consideration. Nor is this a matter of mere pathological or nosological interest, important as that aspect of the question may be, for it involves grave questions of sanitation, and it may be the expenditure of large sums of money in regard to the methods of dealing with the health of the European soldier or others generally in these countries, as well as the treatment. It is obvious that it is very important to trace out the causes and deal with them accordingly, and this I trust the discussions of our Society will in some measure tend to effect.

I must apologise for occupying your time so long, but the interest of the subject will, I trust, be sufficient excuse for what is but a brief commentary on a subject of much importance. We will now pass on to the first subject of the session.



